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JUDICIAL DACTILOSCOPY

Iosif Florin Moldovan^{[a],*}

^[a] Western University of Arad, Arad, Romania.

*Corresponding author.

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Abstract

The forensic technique that deals with the study design surface papillary under palms and soles of the feet is called *dactiloscopia*. The term comes from the Greek words *typing* = finger *scopeo* = to look, examine. Dactiloscopia judiciary is the branch of technology that deals with the study forensic dactiloscopia designs that are found in digital region, palmar and plantar as well as traces of these regions in the field of crime and corpses for identification purposes. Dactiloscopia identification is achieved by comparing the fingerprint examination marks in dispute papillary and papillary impressions comparison model, which means those in the filing cabinet fingerprint from the people in the circle of suspects, from people who are to be establish the identity of the corpses of unknown identity or papillary high marks on various objects belonging to the missing person.

Key words: Dactiloscopia; Fingerprint; The forensic technique; Papillary

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1. CONCEPT AND OBJECT JUDICIAL DACTILOSCOPY

On the surface of palms and soles of feet you can see some lines that have different shapes and are separated from each other by some grooves. These lines flow in the form of parallel beams in different directions, creating drawings, which at first glance have no order and are quite confused.

Lines that appear on the surface of hands and feet were called papillary growth and drawings that form are called papillary drawings.

The main task of dactiloscopia for papillary impressions is therefore to determine whether an impugned ago papillary and papillary pattern comparison impression

is created by the same finger, palm or plant leg and on this basis, to establish physical identity of a person.

Which is the same show morphological identity of origin of all the impression and at the same time, it differs from traces and impressions from other people.

How is natural through direct contact palm, finger or foot plant with a surface of an object formed some fingerprints that the pattern of the person papillary created them.

Between offense and modification must be a causal relationship characterized by the same criteria as currently causal structure report actus reus of the offense.

Once discovered the crime field, papillary tracks are fixed, relevant and high at the crime scene investigation to become evidence in criminal proceedings under Article 63 of the Code of Criminal Procedure, and thus support the finding of whether a crime to identify the person who a committed and knowledge necessary for a fair settlement circumstances of the case.

Judicial dactiloscropy subject is the following problems:

developing procedures and means of discovery, revealing, fixing, lifting and interpretation of all, papillary drawings left by a person in different places;

development of papillary design coding rules for the organization of fingerprint records of offenders, for finding recurrence, false names to identify criminals from the traces left at the scene;

developing methods of keeping out of papillary remaining traces of offenses with unidentified (AN);

developing procedures and techniques to fingerprint people and corpses;

developing the methodology for identification of offenders after traces dactiloscopical expertise papillary created it in the field of crime;

identification of unknown corpses on impressions taken from them. There are two possibilities: (a) one body belongs to the person who was dactiloscropy in life; and (b) it when family, relatives and friends of missing persons in unknown conditions may be items that could remain digital traces that people.

2. CONSTRUCTION AND DESIGN PROPERTIES PAPILLARY

The skin is the protective cover that covers the entire surface of the human body. It consists of three layers: the epidermis, dermis and hypodermis.

Protective layer of skin epidermis is composed of epithelial cells that form a protective coating on the skin.

Dermis is a fibrous tissue, connective and elastic which contains capillaries, arterial and venous, and sensory nerve endings of many. The dermis is composed of several tissues; the top layer is called the papillary layer (consisting of a series of conical projections called papillae). Top buds that are crossed by a channel through which pores are sweat and eliminate toxins from the body. Papillae located in the dermis and epidermis continues those prominent conical forms, which are next to each other to form linear ridges of fingerprints. When buds are destroyed, the skin forms a connective tissue without papillary growth. As these buds are dense or even higher number is more developed sense of touch. Specific papillary skin designs on the surface of fingers, soles of the feet, are called dermatoglyphics. They are formed by lines parallel ridges, separated by grooves fingerprints.

Hypodermis is the deepest layer of skin that connects the skin and internal organs.

Besides papillary ridges and grooves to examine the 3 surfaces are studied and bending grooves that separate various parts of the palm and sole of feet finger.

Papillary designs printed on the surface of objects are known as the dactilogramme forensics, which are two categories:

Dactilogram which is printed designs papillary volunteer named specialized language, fingerprints papilla, papillary impressions or fingerprints to compare;

Dactilogram representing papillary drawings printed on any object involuntarily called fingerprints or fingerprint evidence in litigation.

Papillary design properties:

a) uniqueness or individuality – that property which makes each drawing papillary be identical with itself (in the world no two people with identical fingerprints designs may be similar but NOT identical);

b) fixity or stability – is the property that consists of maintaining the sample and the specific details of these designs throughout the person's life. Papillary drawing appears in month 3 of the uterine life and receives final form in May 6th, maintaining the same form throughout the person's life;

c) unalterability or indestructibility – is explained by the fact that these drawings are indestructible regardless of the action of external factors, as long as it was not affected skin tissue deeply, drawing papillary regenerates the same shape originally had;

d) placement great;

e) the ease with which remain at the scene – thanks to the sweat glands arranged pores which removes sweat from the pore and grease from hands when atigerii various objects print on their surface; and

f) the ease with which they can be studied and the ability to be compared.

3. STRUCTURE AND CLASSIFICATION OF PAPILLARY DESIGN

Dactiloscopia identification through fingerprints marks two stages:

establishment belonging to genus or general identification;
identify the actual individual.

Traces of the hands of the person may present either as traces of whole palm or finger that traces indicating the contact of the hand with objects that remain. Whole hand traces remain very rarely at the scene.

In terms of microrelief, the hand shows in terms of interest lower than fingerprint digital region because it has a simpler construction drawings papillary, consisting more of papillary ridge parallel rows that have few specific elements of detail.

Palma is divided into three regions:

Digitopalmar region, which includes the portion of the 5 fingers

Thenar region, located between the thumb and palm heart

Hipotenar region, located in the cubital portion of the palm and palm outwards

The five fingers are called:

- thumb (thumb)
- finger (index)
- middle finger
- ring finger
- pinky or aulicular

Each finger is divided into three segments, with the following names except large finger (it has only 2 segments). The first segment from the palm is called phalanx,

2nd segment, the middle is called falangina, and the 3rd segment of the fingertip is called finger.

On finger papillary drawing has the most varied forms, is called digital papillary drawing, and is best used to identify the person.

Finger region is divided in turn into 3 areas:

First the bending groove is near the basal region, consisting of papillary increases parallel with a horizontal direction.

The second one area, region or nuclear plant in central fingertip.

The third area, the region marginal to fingertip, consisting of increases papillary form of semicircles.

The most important region is central region.

The three regions are separated by two limiting called papillary growth, which separates the basal region of the central region is called the lower limit and the central region separating the upper limit is called marginal.

The place where they meet the 2 limit arises a geometric form triangle-shaped or “Y”, this figure is called “delta”. When delta has the shape of a triangle is called delta white, which can be closed to all 3 angles, open at an angle, 2 or all angles. When delta is shaped like the letter Y is called delta grows black and consist of short, long, with arms of equal or unequal arms.

Delta important is that in relation to the position and number drawings fingerprints are divided by types and varieties, helping to identify general and organizing files with digital impressions in fingerprint records.

The classification of the types and varieties papillary design shall take into account the shape of the central area of papillary ridges fingers, the number and placement of deltas in the papillary drawing on finger:

a) type of spring—is characterized in that in the central area were papillary ridges form an arc, with curve to the fingertips. Also called adeltic as in the drawing we find no delta. If arc drawings can be found growing fingerprints that a triangle shape, but they cannot be regarded as these type deltas are not present the 3 parts of a papillary pattern.

Arc type has 2 varieties:

one simple bow;

one pin arch.

b) type of trap—this type papillary ridges are shaped loops (loops). It is also called as this drawing monodeltic find a single delta, either black or white, left or right placed in the drawing. When delta is right, the variety is called dextrodeltic trap type, when the delta was left across the opening is right and we kind across sinistrodeltic. These drawings are the most common type trap, the sinistrodeltic usually found on the right hand.

c) type bideltic—so-called because in this drawing are 2 deltas usually placed left and right design. There are times when we find the both the right or left. Also called circle as the center of papillary ridges are drawing concentric circles. Depending on the form of ridges in the central area there are the following subtypes:

- concentric circles
- bideltic type oval
- bideltic type spiral (oriented to the right or left)
- bideltic type rocket (the core ridges are shaped like tennis rackets)
- bideltic type twin sides

d) type polideltic or combined—which always meet at least three deltas. Has two varieties: trideltic, quadrodeltic.

e) type amorphous (indefinite or exceptional) —this type papillary ridges have no orderly arrangement and does not form a certain path, has two varieties:

- i partially amorphous, when we find some individual items
- them amorphous total

f) type sinian—a genetic abnormality in the central part has a connective tissue without any increase papillary

Detail design features of papillary:

Specific details refer to the papillary ridge trail, the pore forms, the forms ridges adjacent elements papillary and papillary drawing.

Examination of these individual elements is done in terms of ranking, shape and size. Details that coincide (concur) are called points of coincidence.

Thus, we have the following names of individual elements:

Began to crest

End of ridge

Fragment of ridge

Exceeding the increase

Point papillary

Deviation increase

Ridge grip (hook)

Interruption increases

Bifurcation ridge

Ring

Intersection of increase

Increase alternative

Anastomosis (culvert)

Triangle heads grow

Return

Scar

Island

Specific details are microscope and cannot be seen with the naked eye, but with a magnifying glass.

These details read the circular, meaning walking clockwise.

At fragments from, or in designs and planting palm, which cannot be determined by drawing papillary type, they are read from left to right and from top to bottom. For a positive definite conclusion is required as drawing papillary impression litigation and comparison to find at least 12 items identical characteristics.

4. METHODS AND PROCEDURES OF SEARCH AND DISCOVERY OF ALL

Search for hands trace the route is full of offender carefully so as not to create any traces.

For this purpose, the objects will rise with tweezers or by hand in a glove introduced surgical, grabbing those are places where, usually, cannot get these tracks. To reveal latent tracks using colored hands, acting through adherence to fat and sweaty contained ago.

Revealing these traces is done by physical methods, spraying dust or fine powder on objects bearing traces, respecting two conditions:

Dust to be in contrast with the support that remains after

To provide adhesion after that

Methods of survey:

By dusting or powdering—sprinkle a pinch from that in contrast to the color of the object

Fumigation—fumigation use cromizate or nickel metal objects

Using chemical reagents: using either iodine vapor or vapor of hydrofluoric acid

Optical methods-used laser radiation type (argon) which gives a certain Flowering substances

5. PROBLEMS CAN BE SOLVED BY EXPERTISE DACTILOSCOPYC

Dactiloscopyc expertise can solve the following problems:

traces reveal latent fingerprints on various objects;

identify the person who left traces of papillary incriminated;

identifying persons and bodies with unknown identity in anthropological filing cabinet;

identify persons who have declared a false identity;

verify signatures made by putting your finger by illiterate people.

In most cases the object identification fingerprint expert criminals who have taken their toll fingerprints at the scene. In these situations fingerprint comparisons are made between the dispute and photographs from traces papillary impressions of persons included in the circle of suspects or fingerprint in filing cabinet.

In this wizard can be submitted questions based on material provided:

a) The papillary tracks:

If the object traces provided by papillary and say,

If a profile contains therein papillary specific details from two or more drawings papillary,

If the result is digital, palmar or plantar;

What type, subtype and variety all;

From the hand, finger or plant derived from papillary

If sufficient information from the individual identification;

What is the mechanism of formation of all fingerprints;

Whether from high spot and papillary impression presented as model comparison are created by the same person;

In certain situations can determine an approximate age of the person who created from papillary

For children up to 10 years and all papillary length depending on environmental factors and studies by request.

b) The papillary impressions:

If advanced papillary impressions are fit fingerprint comparisons,

If advanced papillary impressions are found in the AFIS database and what data PRINTRAK BIS marital status,

If two or more sets of papillary impressions were created by the same person or different persons who are their identification.

In order to draw a positive conclusion, forensic expert examines comparative experimental dactilo taken from the scene, doing the finding coincidences group of them and then detail the specific.

Comparative Evaluation method is the one used currently:

Juxtaposition of images and aerial photographs are to present the next two impressions (trace) papillary increased compared to the same scale, which is drawn together at least 12 points coincidences in both frames.

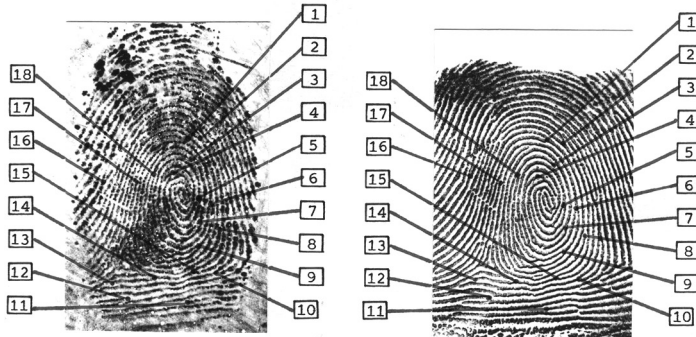


Figure 1
A-from B-impression Contested Papillary Papillary Pattern Compared

Linear continuity of the design process papillary segmentation is applied by two or more parties to the dispute and impresiunii photograms urmeiîn compared papillary pattern, thus checking if drawing papillary morphological changes.

Diagram showing points of coincidence as the name, is a transparent overlay of all papillary impression, marking and straight lines joining the distance between points coincidences, then seeing if impresiuneaa ago and were created by the same finger or palm or region plant foot.

Otherwise, examine the pores, scars and white lines on which the expert uses in the alternative.

6. LABORATORY MONITORING AND EXPERT EXAMINATION DACTILOSOPYC

Need to adopt a better method for registering offenders as an alternative to uncertainties and inconstanțele anthropometric method, generated dactiloscopiei development approach and the first decades of the twentieth century. Fingerprint, the system of registration and identification of persons, has a double valence in that, on the one hand, people can be made subject to the criminal records, and on the other hand, comparative analysis made between high papillary traces technical and scientific investigation at the crime scene and fingerprint impressions fingerprints contained in the records can be identified criminal offenders.

Shall:

- organize and maintain databases assisted by computers including papillary impressions of persons investigated by police in arrest or sentence for offenses committed judicial and

papillary traces of unresolved cases in track units and subunits Police;

- coding and examine traces from cases in working with unknown authors and impressions offenders, making identification of the perpetrators dactyloscopic and connections between unsolved cases;
- check databases of fingerprint impressions persons whose records are sent via International Police Cooperation Centre and impressions unknown corpses in order to identify them;
- fingerprint performs examinations and expertise in specific cases in progress and new expertise dactyloscopic made at the request of prosecutors, the courts and local police units;
- Ensures implementation and compliance review activities and expertise dactyloscopic European standards dedicated to this area of forensics.

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